UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/595,528	02/28/2007	John Mak	100325.0235US	2288

24392 7590 10/27/2011

FISH & ASSOCIATES, PC
ROBERT D. FISH
2603 Main Street
Suite 1000
Irvine, CA 92614-6232

EXAMINER	
BALDRIDGE, LUKAS M	

ART UNIT	PAPER NUMBER
3784	

NOTIFICATION DATE	DELIVERY MODE
10/27/2011	ELECTRONIC

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

rfish@fishiplaw.com
patents@fishiplaw.com

Office Action Summary	Application No.	Applicant(s)	
	10/595,528	MAK, JOHN	
	Examiner	Art Unit	
	LUKAS BALDRIDGE	3784	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE *3* MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *07 September 2011*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ An election was made by the applicant in response to a restriction requirement set forth during the interview on _____; the restriction requirement and election have been incorporated into this action.

4)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

5)☒ Claim(s) *1-6,9-11 and 13-20* is/are pending in the application.

5a) Of the above claim(s) _____ is/are withdrawn from consideration.

6)☐ Claim(s) _____ is/are allowed.

7)☒ Claim(s) *1-6, 9-11 and 13-20* is/are rejected.

8)☐ Claim(s) _____ is/are objected to.

9)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

10)☐ The specification is objected to by the Examiner.

11)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

12)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

13)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

This action is in response to the amendment filed September 7, 2011. Claims 7, 8 and 12 are canceled.

Claim Objections

1. Claims 19 and 20 are objected to because of the following informalities: In claim 19, line 1 the words "the portion of the feed" should be changed to - -a portion of the feed- - to provide proper antecedent basis; In claim 19, lines 1-2 the words "the portion of the overhead" should be changed to - -the liquid portion of the overhead- -; In claim 20, line 1 the words "the portion of the feed gas vapor, the portion of the feed gas liquid and the portion of the" should be changed to - -the feed gas vapor, the feed gas liquid, and the- - to provide proper antecedent basis. Appropriate correction is required.

Claim Rejections - 35 USC § 112

1. The following is a quotation of the second paragraph of 35 U.S.C. 112:

> The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

2. Claims 3 and 11-16 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claim 3 recites the limitation "wherein the ratio determines absorber overhead temperature" in lines 1-2. It is unclear which of the previously recited ratios the limitation is referring to, thereby rendering the claim indefinite.

Claim 11 recites the limitation "the first and second portions" in lines 11, 14 and 15. It is unclear which of the previously recited first and second portions the limitation is referring to, thereby rendering the claim indefinite.

Claim Rejections - 35 USC § 102

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

1. Claim 1 is rejected under 35 U.S.C. 102(b) as being anticipated by Yao et al. (U.S. Pat. No. 6,116,050, hereinafter "Yao").

In regard to claim 1, FIG. 2 of Yao discloses an absorber (20); and

a control unit (28a, 21a, 82a) that controls the ratio of a first (26) and a second (30) portion of a feed gas vapor (25), a first (17) and second (22) portion of a feed gas liquid (15), and a first (84) and second (80) portion of a distillation column overhead (77) (col. 8, lns. 24-27, *controlling the flow through line 26 would necessarily control the flow through line 30 and control their ratio*; *controller 21a controls flow through 22 which necessarily controls the flow through line 17*; *controller 82a controls flow through 83 which affects the flow through line 84, e.g. by increasing pressure in the separator resulting in increased flow through 84*).

"An absorber that is configured to" is merely the recitation of an element capable of performing the function "separately receive a first and second portion of a feed gas vapor, to separately receive a first and second portion of a feed gas liquid, and to separately receive a first and second portion of a downstream distillation column

overhead." It has been held that the recitation that an element is "capable of" performing a function is not a positive limitation but only requires the ability to so perform. See *In re Hutchison*, 69 USPQ 138. An absorber such as that in Yao is capable of receiving many configurations of fluid inputs, as evidenced by the differences between FIGS. 1 and 2. Therefore, the absorber of Yao is capable of separately receiving first and second portions of a feed gas vapor, feed gas liquid and downstream distillation column overhead. "The absorber is configured" is merely the recitation of an element capable of performing the function "such that the first portion of the feed gas vapor and the first portion of the distillation column overhead provide reflux to the absorber, and such that the second portion of the distillation column overhead provides a vapor stream enriched in ethane for ethane re-absorption at a bottom portion of the absorber." The absorber of Yao is capable of receiving two reflux inputs and a vapor stream enriched in ethane, as illustrated in the varied configurations of fluid inputs.

In order to positively recite the structure, the claim can be amended to recite, for example, "an absorber having a first port and a second port, a first and a second portion of a feed gas vapor connected to the first and second port, respectively." The Applicant is invited to contact the Examiner should Applicant wish to discuss how to positively recite any limitations.

Claim Rejections - 35 USC § 103

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

2. The factual inquiries set forth in *Graham* v. *John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

3. Claims 2-5, 9 and 10 are rejected under 35 U.S.C. 103(a) as being unpatentable over Yao et al. (U.S. Pat. No. 6,116,050, hereinafter "Yao") in view of Jain et al. (U.S. Pat. No. 6,453,698, hereinafter "Jain").

In regard to claim 2, and as applied to claim 1 above, Yao, as modified, discloses wherein the distillation column (73) is configured to operate as at least one of a demethanizer and a deethanizer (col. 9, ln. 40).

Yao, as modified, fails to explicitly disclose and wherein the feed gas component in the bottom product is ethane.

The general concept of obtaining a feed gas component in the bottom product being ethane falls within the realm of common knowledge as obvious mechanical expedient and is illustrated by Jain. Jain discloses a flexible reflux process for NGL recovery in FIGS. 2 and 3. The plant can be operated in an ethane recovery mode and an ethane rejection mode (demethanizer and deethanizer, col. 6, lns. 2-12). In the

mode illustrated in FIG. 2, distillation column 84 is operated as a demethanizer to produce ethane as the bottom liquid product 110 (col. 12, lns. 20-22). One of ordinary skill in the art would have been motivated to provide a distillation column operable as a demethanizer and deethanizer, as taught in Jain, in the Yao invention, in order to increase the recovery and production capabilities of ethane.

In regard to claim 3, and as applied to claim 1, Yao, as modified, fails to explicitly disclose wherein the ratio determines absorber overhead temperature.

The modification of Yao in view of the teachings of Jain, as discussed above, teaches wherein the ratio determines absorber overhead temperature. Jain teaches varying a ratio of a first and second portion of feed gas vapor depending on a 2 mode operating scheme (see also col. 6, lns. 2-4). The specific ratios of streams 24, 26 in each of the modes illustrated in FIGS. 2 and 3 determine absorber overhead temperature (col. 11, lns. 35-39, "stream 40 is obtained at -143°F" and col. 13, lns. 40-45, "stream 40 is obtained at -88°F").

In regard to claim 4, and as applied to claim 1, Yao, as modified, discloses wherein the absorber is configured to operate at an absorber pressure (*inherent*), wherein the distillation column is configured to operate at a distillation column pressure (*inherent*). Yao, as modified, does not explicitly disclose wherein the absorber pressure is greater than the distillation column pressure. However, the general concept of changing the pressure of components in an NGL process to obtain a desired operation

falls within the realm of common knowledge as obvious mechanical expedient and is illustrated by Jain, which teaches the concept of operating an absorber at an absorber pressure (col. 8, lns. 8-9) and a distillation column at a distillation column pressure (col. 9, ln. 24), where the absorber pressure (350 Psia) is greater than the distillation column pressure (330 Psia). One having ordinary skill in the art would have been motivated to vary the absorber and distillation column pressures in order to obtain the desired plant operation and product and to reduce power consumption by not having to increase the pressure of fluid transferred from the absorber to column.

In regard to claim 5, and as applied to claims 1 and 4, Yao, as modified, fails to explicitly disclose wherein an absorber bottom product is expanded to provide at least a portion of feed gas chilling. The general concept of lowering the temperature of a fluid by expanding it to provide cooling to other fluids falls within the realm of common knowledge as obvious mechanical expedient and is illustrated in Yao, which teaches vapor flowing through line 30 (from line 13 at a temperature of about 15°F, see col. 7, lns. 62-63) and through expander 31 is cooled to -55°F (col. 8, lns. 27-31). One of ordinary skill in the art would have been motivated to include the use of an expander in the bottom product 58 of the absorber 20 in order to provide additional feed gas chilling in heat exchanger 12 if desired.

In regard to claim 9, and as applied to claims 1 and 2 above, Yao, as modified, fails to explicitly disclose wherein ethane recovery in the bottom product increases when

the first portion of the feed gas vapor increases relative to the second portion of feed gas vapor.

The modification of Yao in view of the teachings of Jain, as discussed above, teaches a plant operated in an ethane recovery mode and an ethane rejection mode (column 84 as demethanizer and deethanizer, col. 6, lns. 2-12). In the mode illustrated in FIG. 3, column 84 is operated as a deethanizer and vapor streams 26 (first portion), 24 (second portion) are split in a 16 to 84 ratio (col. 12, ln. 66 to col. 13, ln. 1). In the mode illustrated in FIG. 2, the ratio of vapor stream 26 to vapor stream 24 is increased (24 to 76, see col. 10, lns. 32-35) as distillation column 84 is operated as a demethanizer to produce ethane as the bottom liquid product 110 (col. 12, lns. 20-22). It would have been obvious to one skilled in the art to modify Yao, as modified, with the two mode recovery scheme of Jain, and thus the increase a first vapor stream to obtain an ethane bottom product, in order to increase the NGL recovery capabilities of the plant in Yao.

In regard to claim 10, and as applied to claims 1 and 2 above, Yao, as modified, does not explicitly disclose wherein ethane recovery in the bottom product increases when the first portion of the distillation column overhead decreases relative to the second portion of the distillation column overhead. However, the apparatus claim does not recite any further structure. It is noted the phrases "wherein ethane recovery in the bottom product increases when the first portion of the distillation column overhead decreases relative to the second portion of the distillation column overhead" are

statements of intended use and the device is capable of performing the function. When the structure recited in the reference is substantially identical to that of the claims, the claimed properties or functions are presumed inherent. See MPEP §2112.01 I. In this case, Yao, as modified, discloses the first and second portion of the distillation column overhead.

4. Claim 6 is rejected under 35 U.S.C. 103(a) as being unpatentable over Yao et al. (U.S. Pat. No. 6,116,050, hereinafter "Yao") in view of Campbell et al. (U.S. Pat. No. 6,182,469, hereinafter "Campbell").

In regard to claim 6, and as applied to claim 1, Yao discloses wherein an overhead (61) is fed to the bottom of the absorber to thereby form a stripping gas stream (col. 9, lns. 23-24). Yao does not explicitly disclose wherein the overhead is a second portion of a distillation column overhead. However, FIG. 1 of Campbell discloses a natural gas separation system. Campbell teaches a distillation column overhead (39) is fed to the bottom of an absorber (17) to form a stripping gas stream. Therefore, it would have been obvious to one of ordinary skill in the art at the time of invention to provide a portion of the distillation column overhead to the bottom of the absorber to form a stripping gas stream, as taught by Campbell, as a second portion of column overhead in the Yao invention, in order to advantageously increase separation of feed constituents, increase product purity and reduce the number of system components.

5. Claim 11 and 13-20 are rejected under 35 U.S.C. 103(a) as being unpatentable over Yao et al. (U.S. Pat. No. 6,116,050, hereinafter "Yao") in view of Campbell et al. (U.S. Pat. No. 6,182,469, hereinafter "Campbell") and Jain et al. (U.S. Pat. No. 6,453,698, hereinafter "Jain").

In regard to claim 11, FIG. 2 of Yao discloses providing an absorber (20) and a downstream distillation column (73), wherein the absorber receives a plurality of absorber feed streams and provides a bottom product (55) to the distillation column;

splitting at least one of the feed streams (25) into a first (26) and a second (30) portion, and introducing the first and second portions at different locations to the absorber (FIG. 2);

feeding a first portion (77) of a distillation column overhead to the absorber as reflux and an ethane vapor stream (66) to the absorber for ethane re-absorption at a bottom portion of the absorber (col. 9, lns. 23-24; col. 14, lns. 13-15); and

splitting another one of the feed streams (15) into a first (22) and second (17) portion.

Yao does not explicitly disclose (i) the ethane enriched vapor stream as a second portion of the distillation column overhead; (ii) using a flow ratio between the first and second portions to control recovery of a desired product in a bottom product of the distillation column; (iii) introducing the first and second portions of the another feed

stream at different locations in the absorber; and (iv) using a flow ratio between the first and second portions of the feed streams, respectively, to control recovery of the desired product in the bottom product of the distillation column.

(i) FIG. 1 of Campbell discloses a natural gas separation system. Campbell teaches a distillation column overhead (39) fed to the bottom of an absorber (17) to form a stripping gas stream. Therefore, it would have been obvious to one of ordinary skill in the art at the time of invention to provide a portion of the distillation column overhead to the bottom of the absorber to form a stripping gas stream, as taught by Campbell, as a second portion of column overhead in the Yao invention, in order to advantageously increase separation of feed constituents, increase product purity and reduce the number of system components.

(ii) and (iv) The general concept of using a flow ratio between first and second portions of feed streams falls within the realm of common knowledge as obvious mechanical expedient and is illustrated by Jain. Jain teaches adjusting the first and second portion of the feed gas vapor (26, 24) in FIGS. 2 and 3 to obtain a desired recovery rate. FIG. 2 illustrates a process scheme for high ethane recovery with stream 26 forming 24% (stream 24 forming 76%) of the flow (col. 10, lns. 31-35), while FIG. 3 shows a scheme for high propane recovery with ethane rejection with stream 26 forming 16% (stream 24 forming 84%) of the flow (col. 12 ln. 67 to col. 13 ln. 1). Thus, the ratio of the flows are adjusted differently for the type of process scheme and each process scheme has a desired recovery rate of a feed gas component in a bottom product of the distillation column (col. 6 lns. 1-4 and col. 12 lns. 45-50). One of ordinary skill in the art

would have been motivated to provide using a flow ratio between the first and second portions of feed gas in order to produce a desired product.

(iii) FIG. 1 of Campbell teaches another feed stream (35) split into a first (35a) and second (FIG. 1) portion and introducing the first and second portions to different locations of the absorber (FIG. 1). Therefore, it would have been obvious to one of ordinary skill in the art at the time of invention to provide first and second portions of a split feed stream to different locations of an absorber, as taught by Campbell, in Yao as modified, in order to advantageously increase separation by increasing distribution of the feed throughout the column with two feeds instead of one.

In regard to claim 13, and as applied to claim 11, Yao, as modified, discloses wherein the plurality of feed streams comprises a natural gas liquids vapor (25) and natural gas liquids liquid (15).

In regard to claim 14, and as applied to claims 11 and 13, Yao, as modified, discloses wherein the natural gas liquids vapor and natural gas liquids liquid are provided by a high pressure separator (14).

In regard to claim 15, and as applied to claims 11 and 13, Yao, as modified, fails to explicitly disclose wherein the desired product in the bottom product of the distillation column is ethane. The general concept of having ethane as the desired bottom product of a distillation column falls within the realm of common knowledge as obvious

mechanical expedient and is illustrated by Jain, which teaches a flexible reflux process for NGL recovery in FIGS. 2 and 3. The distillation column 84 can be operated in an ethane recovery mode and an ethane rejection mode (demethanizer and deethanizer, col. 6, lns. 2-12). In the mode illustrated in FIG. 2, distillation column 84 is operated as a demethanizer to produce ethane as the bottom liquid product 110 (col. 12, lns. 20-22). One having ordinary skill in the art would have been motivated to include the use of a distillation column operable in an ethane recovery mode in order to recover a useful NGL for sale or fuel use.

In regard to claim 16, and as applied to claim 11, Yao, as modified, fails to explicitly disclose wherein the absorber is operated at a pressure that is higher than a pressure in the distillation column. The general concept of changing the pressure of components in an NGL process to obtain a desired operation falls within the realm of common knowledge as obvious mechanical expedient and is illustrated by Jain, which teaches the concept of operating an absorber at a higher pressure (col. 8, lns. 8-9) than a pressure in a distillation column (col. 9, ln. 24). One having ordinary skill in the art would have been motivated to vary the absorber and distillation column pressures in order to obtain the desired plant operation and product and to reduce power consumption by not having to increase the pressure of fluid transferred from the absorber to column.

In regard to claim 17, FIG. 2 of Yao discloses providing an absorber (20) that is fluidly coupled to a downstream distillation column (73), wherein the absorber receives a feed gas vapor (25), a feed gas liquid (15), and an overhead product (77) from the distillation column; and

controlling (57, 64) a flow of a vapor (61) to the bottom of the absorber and flow (*via FC,* 82) of a liquid portion (45) of the overhead product to the top of the absorber to control absorber overhead temperature (*inherently controls temperature because the stream affects the overhead temperature*).

Yao does not explicitly disclose (i) the vapor being a vapor portion of the overhead product from the distillation column and (ii) the ethane content in a bottom product of the distillation column increases when the absorber overhead temperature decreases.

(i) FIG. 1 of Campbell discloses a natural gas separation system. Campbell teaches a distillation column overhead (39) fed to the bottom of an absorber (17) to form a stripping gas stream. Therefore, it would have been obvious to one of ordinary skill in the art at the time of invention to provide a portion of the distillation column overhead to the bottom of the absorber to form a stripping gas stream, as taught by Campbell, as a second portion of column overhead in the Yao invention, in order to advantageously increase separation of feed constituents, increase product purity and reduce the number of system components.

(ii) The general concept of having ethane as a bottom product of a distillation column falls within the realm of common knowledge as obvious mechanical expedient

and is illustrated by Jain, which teaches a flexible reflux process for NGL recovery in FIGS. 2 and 3. The distillation column (84) can be operated in an ethane recovery mode and an ethane rejection mode (demethanizer and deethanizer, col. 6, lns. 2-12). In the mode illustrated in FIG. 2, distillation column (84) is operated as a demethanizer to produce ethane as the bottom liquid product 110 (col. 12, lns. 20-22). One having ordinary skill in the art would have been motivated to include the use of a distillation column operable in an ethane recovery mode in order to recover a useful NGL for sale or fuel use.

Yao, as modified, does not explicitly disclose the ethane content in a bottom product of the distillation column increases when the absorber overhead temperature decreases. However, when a prior art device is the same as a device described in the specification for carrying out the claimed method, it can be assumed the device will inherently perform the claimed process. See MPEP §2112.02. In this case, Yao, as modified, controls a flow of a vapor portion of overhead to the bottom of the absorber and a flow of a liquid portion of overhead to the top of the absorber. Therefore, Yao, as modified, inherently controls absorber overhead such that ethane content in a bottom product of the distillation column increases when the absorber overhead temperature decreases.

In regard to claim 18, and as applied to claim 17, Yao, as modified, fails to explicitly disclose wherein the absorber is operated at a pressure that is higher than a pressure in the distillation column. The general concept of changing the pressure of

components in an NGL process to obtain a desired operation falls within the realm of common knowledge as obvious mechanical expedient and is illustrated by Jain, which teaches the concept of operating an absorber at a higher pressure (col. 8, lns. 8-9) than a pressure in a distillation column (col. 9, ln. 24). One having ordinary skill in the art would have been motivated to vary the absorber and distillation column pressures in order to obtain the desired plant operation and product and to reduce power consumption by not having to increase the pressure of fluid transferred from the absorber to column.

In regard to claim 19, and as applied to claim 17, Yao, as modified, discloses wherein the portion of the feed gas vapor (29) and the portion of the overhead product (45) are used as absorber reflux (col. 8 lns. 12-26 and col. 10, lns. 29-31).

In regard to claim 20, and as applied to claim 17, Yao, as modified, discloses wherein the portion of the feed gas vapor (25), the portion of the feed gas liquid (15), and the portion of the overhead product (45) are fed to the absorber (see FIG. 2).

Response to Arguments

6. Applicant's arguments with respect to claims 1-20 have been considered but are moot in view of the new ground(s) of rejection.

Regarding section (a)(iv) on page 8, Applicant argues that since Yao already uses flow control of the vapor streams, modifying Yao with the ratio control of Jain

would render the original configurations inoperable for their intended purpose. The Examiner disagrees. Jain is used to teach the concept of varying the ratios of split streams. There is no evidence that controlling the ratios of the split streams in Yao, as modified, with available controls or even additional control elements of Jain would render Yao inoperable for its intended purpose. Yao, as modified, continues to separate a natural gas stream and produce fluid products, the modification merely provides additional operational capability.

Conclusion

The following prior art made of record and not relied upon is considered pertinent to applicant's disclosure:

Devers (U.S. Pat. No. 5,669,238) discloses a ratio controller (66) to control the ratio of split streams sent to an absorber.

1. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any

extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to LUKAS BALDRIDGE whose telephone number is 571-270-3782. The examiner can normally be reached on M-F 9 to 5.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor Frantz Jules can be reached at 571-272-6681. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/LUKAS BALDRIDGE/
Examiner, Art Unit 3784

/Frantz F. Jules/

Supervisory Patent Examiner, Art Unit 3784